

BEST AVAILABLE COPY**Remarks**

Claims 1-7, 9-12, 26-38, and 55-64 are presently pending. Claims 13-25 and 39-54 have been canceled. By this paper, independent claims 1 and 26 have been amended. New claims 55-64 have been added commensurate with the scope of the present invention.

Claim 1 stands rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application No. 2003/0183862 to Jin et al. ("Jin"). As amended, claim 1 recites a top electrode completely filling the capacitor trenches. Support for this recitation is found in Figures 5 and 6 and the accompanying text. In Jin, the upper electrode layer 94 is conformal to the dielectric layer 92 and the conductive layer 90, but does not completely fill the capacitor trench. Jin discloses that the upper interconnection conductive layer 100 is used to completely fill the capacitor trench. Jin discloses the upper electrode layer 94 as only a conformal coating, not as an element that fills the trench to a planar level. Jin does not disclose the recited elements of claim 1, and is not an anticipatory reference.

Independent claim 26 stands rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,777,423 to Kubo ("Kubo"). Claim 26 recites that the capacitor dielectric is in direct contact with the bottom electrode plug. Support for this recitation is found in Figures 14 and 15 and the accompanying text. The polycrystalline silicon plugs 13 of Kubo are not in direct contact with the dielectric films 500. Kubo teaches that the lower electrodes 21 separate the polycrystalline silicon plugs 13 and the dielectric films 500. In Kubo, there is no need for a polycrystalline silicon plug 13 to directly contact a dielectric film 500, as the plug 13 does not serve to improve capacitance effect.

Claim 26 recites that the capacitor dielectric and the top electrode are formed around a majority of the bottom electrode plug. Support for this recitation is found in Figures 14 and 15

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and the accompanying text. Kubo teaches that the dielectric film 500 and the upper electrode 22 are formed around a minority of the polycrystalline silicon plug 13. This follows as the polycrystalline silicon plug 13 only partially extends into the trench. By having the capacitor dielectric and top electrode extending around the majority of the bottom electrode plug, an improved capacitive effect is achieved that is not taught in Kubo. As Kubo does not teach a bottom electrode plug in direct contact with a dielectric formed along the majority of the bottom electrode plug, Kubo cannot anticipate claim 26.

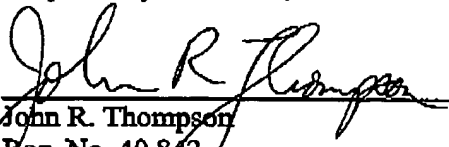
The Applicant respectfully submits that claims 1 and 26 represent patentable subject matter. Anticipation under section 102 is proper only if the reference shows exactly what is claimed. Titanium Metals Corp. v. Banner, 778 F.2d 775, 780, 227 USPQ 773, 777 (Fed. Cir. 1985); MPEP § 2131.01. As depending claims 2-7, 9-12, and 27-38 depend from their respective independent claims and include all their limitations, they likewise contain patentable subject matter.

Newly added claim 55 recites an insulating material at least partially formed on a metal layer and forming an outside sidewall, and a capacitor dielectric in direct contact with the bottom electrode plug. Neither Jin and Kubo disclose these recited elements. With respect to the depending claims, claim 56 recites that the bottom electrode plug is disposed between the bottom electrode layer and the capacitor dielectric. Claim 57 recites that the bottom electrode plug is completely disposed within the capacitor trench and extends approximately the same length as the outside sidewall. Claim 58 recites that the bottom electrode plug includes metal. Claim 59 recites that the capacitor dielectric and the top electrode extend around a majority of the bottom electrode plug. As the cited prior art references do not teach or suggest these limitations, claims 55-64 represent patentable subject matter.

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Applicant believes the application is now in condition for allowance and respectfully requests the same. The Examiner is encouraged to telephone the undersigned if any issues remain.

Respectfully submitted,


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